METHOD AND SYSTEM FOR SHAPE-MEMORY ALLOY WIRE CONTROL

CROSS REFERENCE TO RELATED APPLICATION(S)

[0001] The present application is a Continuation of U.S. patent Ser. No. 15/633,178, filed Jun. 26, 2017 and entitled Method and System for Shape-Memory Alloy Wire Control, now U.S. Pat. No. 10,933,187, issued Mar. 2, 2021 (Attorney Docket No. V50), which is a Continuation of U.S. patent Ser. No. 14/507,484, filed Oct. 6, 2014 and entitled Method and System for Shape-Memory Alloy Wire Control, now U.S. Pat. No. 9,687,602, issued Jun. 27, 2017 (Attorney Docket No. P07), which is a Divisional of U.S. patent Ser. No. 13/011,384, filed Jan. 21, 2011 and entitled Method and System for Shape-Memory Alloy Wire Control, now U.S. Pat. No. 8,852,164, issued Oct. 7, 2014 (Attorney Docket No. 148) which claims priority from U.S. Provisional Patent Application Ser. No. 61/297,506, filed Jan. 22, 2010 and entitled Method and System for Temperature Compensation in a Medical Device (Attorney Docket No. H84), all of which are hereby incorporated herein by reference in their entireties.

[0002] U.S. patent Ser. No. 13/011,384 is also a Continuation-in-Part of U.S. patent application Ser. No. 12/347,981, filed Dec. 31, 2008 and entitled Infusion Pump Assembly, now U.S. Pat. No. 8,496,646, issued Jul. 30, 2013 (Attorney Docket No. G77), which is hereby incorporated herein by reference in its entirety, which application also claims priority from the following U.S. Provisional patent applications, all of which are hereby incorporated herein by reference in their entireties:

[0003] U.S. Provisional Patent Application Ser. No. 61/018,054, filed Dec. 31, 2007 and entitled Patch Pump with Shape Memory Wire Pump Actuator (Attorney Docket No. E87);

[0004] U.S. Provisional Patent Application Ser. No. 61/018,042, filed Dec. 31, 2007 and entitled Patch Pump with External Infusion Set (Attorney Docket No. E88);

[0005] U.S. Provisional Patent Application Ser. No. 61/017,989, filed Dec. 31, 2007 and entitled Wearable Infusion Pump with Disposable Base (Attorney Docket No. E89);

[0006] U.S. Provisional Patent Application Ser. No. 61/018,002, filed Dec. 31, 2007 and entitled Patch Pump with Rotational Engagement Assembly (Attorney Docket No. E90);

[0007] U.S. Provisional Patent Application Ser. No. 61/018,339, filed Dec. 31, 2007 and entitled System and Method for Controlling a Shape-Memory Actuator (Attorney Docket No. E91);

[0008] U.S. Provisional Patent Application Ser. No. 61/023,645, filed Jan. 25, 2008 and entitled Infusion Pump with Bolus Button (Attorney Docket No. F49);

[0009] U.S. Provisional Patent Application Ser. No. 61/101,053, filed Sep. 29, 2008 and entitled Infusion Pump Assembly with a Switch Assembly (Attorney Docket No. F73);

[0010] U.S. Provisional Patent Application Ser. No. 61/101,077, filed Sep. 29, 2008 and entitled Infusion Pump Assembly with a Tubing Storage (Attorney Docket No. F74);

[0011] U.S. Provisional Patent Application Ser. No. 61/101,105, filed Sep. 29, 2008 and entitled Improved Infusion Pump Assembly (Attorney Docket No. F75); and

[0012] U.S. Provisional Patent Application Ser. No. 61/101,115, filed Sep. 29, 2008 and entitled Filling Apparatus and Methods for an Infusion Pump Assembly (Attorney Docket No.G08).

[0013] U.S. patent application Ser. No. 12/347,981 is also a Continuation-In-Part Application of each of the following applications:

[0014] U.S. patent application Ser. No. 11/704,899, filed Feb. 9, 2007 and entitled Fluid Delivery Systems and Method, now U.S. Pat. No. 8,414,522, issued Apr. 9, 2013 (Attorney Docket No. E70);

[0015] U.S. patent application Ser. No. 11/704,896 filed Feb. 9, 2007 and entitled Pumping Fluid Delivery Systems and Methods Using Force Application Assembly, now U.S. Pat. No. 8,585,377, issued Nov. 19, 2013 (Attorney Docket No. 1062/E71);

[0016] U.S. patent application Ser. No. 11/704,886, filed Feb. 9, 2007 and entitled Patch-Sized Fluid Delivery Systems and Methods, now U.S. Pat. No. 8,545,445, issued Oct. 1, 2013 (Attorney Docket No. 1062/E72); and

[0017] U.S. patent application Ser. No. 11/704,897, filed Feb. 9, 2007 and entitled Adhesive and Peripheral Systems and Methods for Medical Devices, now U.S. Pat. No. 8,113,244, issued Feb. 14, 2012 (Attorney Docket No. 1062/E73), all of which claim priority from the following U.S. Provisional patent applications, and all of which are hereby incorporated herein by reference in their entireties:

[0018] U.S. Provisional Patent Application Ser. No. 60/772,313, filed Feb. 9, 2006 and entitled Portable Injection System (Attorney Docket No. 1062/E42);

[0019] U.S. Provisional Patent Application Ser. No. 60/789,243, filed Apr. 5, 2006 and entitled Method of Volume Measurement for Flow Control (Attorney Docket No. 1062/E53); and

[0020] U.S. Provisional Patent Application Ser. No. 60/793,188, filed Apr. 19, 2006 and entitled Portable Injection and Adhesive System (Attorney Docket No. 1062/E46), all of which are hereby incorporated herein by reference in their entireties.

[0021] The present application may all be related to:

[0022] U.S. Provisional Patent Application Ser. No. 60/889,007, filed Feb. 9, 2007 and entitled Two-Stage Transcutaneous Inserter (Attorney Docket No. 1062/E74), which is hereby incorporated herein by reference in its entirety.

FIELD OF THE INVENTION

[0023] This application relates generally to fluid delivery systems, and more particularly to infusion pump assemblies.

BACKGROUND

[0024] Many potentially valuable medicines or compounds, including biologicals, are not orally active due to poor absorption, hepatic metabolism or other pharmacokinetic factors. Additionally, some therapeutic compounds, although they can be orally absorbed, are sometimes required to be administered so often it is difficult for a patient to maintain the desired schedule. In these cases, parenteral delivery is often employed or could be employed.

[0025] Effective parenteral routes of drug delivery, as well as other fluids and compounds, such as subcutaneous injec-